

Work Order ID 53749

November 17, 2009 7:40:25 AM

Page 1

Item ID: D6104-001

Accept

Revision ID: B

Item Name: Round Billet, 17-4

Start Date: 11/17/09 Start Qty: 20.00

Required Date: 12/01/09 Req'd Qty: 20.00

Reference:

Approvals:

Process Plan:

CZ

Date: 09/11/17

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr

Revision Nbr

D6104

Rev B

100

0.00



Purchasing

PURCHASING

Memo

0.00

Purchasing

Issue P/O: 10773 (a)Description: S.S round billet (b) Ø3.25" x 3.80" long (c) Tolerance on all dimensions are +0.030"/-0.000" (d) Material: 17-4PH Stainless steel (e) One blank makes 2 parts (f) Material certification required

CZ 09/11/17 20

110

0.00



Packaging

Receive & Inspect for Damage & Mat'l Certs

Memo

0.00

Packaging

Ensure material certification is attached

09/16/20 (20)

120

0.00



QC

QC6- Inspect dimensions to drawing

Memo

0.00

Quality Control

Ensure Material certification comply to Dwg D6104

09/12/01

20

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 53749



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November 17, 2009 7:40:25 AM

Item ID: D6104-001

Accept



Setup Start



Revision ID: B

Stop



Item Name: Round Billet, 17-4

Start Date: 11/17/09 Start Qty: 20.00



Cust Item ID:

Required Date: 12/01/09 Req'd Qty: 20.00



Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

130

Identify as per dwg & Stock Location: MAT

0.00



Packaging

Memo

0.00

mf 09/12/01

20

Packaging

140

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

09/12/01 mf

09-12-01

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

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Work Order ID: 53749

Parent Item: D6104-001RevB

Parent Item Name: Round Billet, 17-4



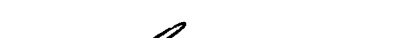
Comments:

Start Date: 11/17/09

Required Date: 12/01/09

Start Qty: 20.00

Required Qty: 20.00

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Remaining Qty To Pick	Qty Issued	Date Issued	Status
D6104-001PRevB		Purchased	No			110	Each	0.0000	20.0000			
												
17-4 SS Roundbar 3" OD												

11/17/09 (30)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

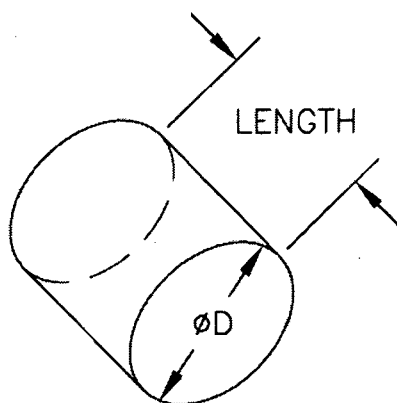
NOTE: Date & initial all entries



DESIGN JF	DRAWN BY [Signature]	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D6104	Rev. B SHEET 1 OF 1
DATE 02.11.25		TITLE ROUND BILLET, 17-4	SCALE NTS
A	01.04.10	NEW ISSUE	
B	02.11.25	CLARIFY ALLOY SPEC ADDED D6104-009/-011 REDUCE LENGTH OF BILLETS	

RELEASED
02.11.29 [Signature]

SPECIFICATION CONTROL DRAWING



SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 0809/1117
W/O: 53749

MATERIAL: 17-4 PH SS (AMS 5643 OR AISI 630) MIN UTS = 170 KSI (38 HRC)

PURCHASE MATERIAL ACCORDING TO THE FOLLOWING TABLE. SPECIFY ALLOY, DIAMETER x LENGTH (+0.030/-0.000) AS SHOWN.

TOLERANCE ON ALL DIMENSIONS IS +0.030/-0.000.

ALL DIMENSIONS ARE IN INCHES

Part No.	Alloy	D (Diameter)	Length
D6104-001	17-4 PH STAINLESS STEEL	Ø3.00	3.80
D6104-003	17-4 PH STAINLESS STEEL	Ø3.25	3.80
D6104-005	17-4 PH STAINLESS STEEL	Ø4.00	5.10
D6104-007	17-4 PH STAINLESS STEEL	Ø4.50	5.10
D6104-009	17-4 PH STAINLESS STEEL	Ø5.25	4.10
D6104-011	17-4 PH STAINLESS STEEL	Ø6.50	4.10

inf
01/12/01

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**Castle Metals®**

A. M. Castle & Co.

PACKING SLIP

Page 1 of 1

Ship From: Castle Metals MONTREAL 835-SELKIRK AVENUE POINTE CLAIRE, QUEBEC H9R 3S2		Sold To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Ship To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7		Deliver To: DART AEROSPACE LTD 1270 ABERDEEN HAWKESBURY, ON K6A 1K7 CA					
Date Shipped 26-NOV-09		F.O.B. ORIGIN		Freight Terms Prepaid		Carrier MANITOULIN		BOL No 137884-2		Delivery No 8048349	

Pack Slip No:8048349

Shipment Details				Final Destination Branch - MON			
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Order No 417080	Line No 1	Item No 48934.MO	Description 3.0000.RD.17CR-4NI.STAINLESS.RT.SOL TR.COND A.132.0000-156.0000 CUT TO 3.8 IN (+ .1250/- .0000 IN) - BAND SAW CUTTING SPECIFICATIONS: AISI 630,AMS 5643,ASME SA564,ASTM A564,UNS S17400										
Purchase Order No 10773		Part Number YOUR ITEM NUMBER: D6104-001		Ordered Qty 20 PCS		Invoice Qty 20 PCS		Backorder Qty					
Details													
Mill		Heat Number A10746		Mech Id		PCS 20		Width (IN)		Length (IN)		Shipped Qty (LBS) 156.01	

These commodities/technologies are subject to US Export Administration & US State Dept. Regulations and, if intended for export, were/are exported thereunder. Diversion contrary to US Law is Prohibited.

We hereby certify the material covered by this certification conforms in accordance with the above specifications and has been found to meet the applicable requirements for the material, including any specifications forming a part of the description. Test reports are on file subject to examination. All claims for defective material are waived unless made in writing to A.M. Castle & Co. within 60 days of the shipment. Material cut to the correct size, or material cut by the customer cannot be returned for credit.

This material has been received and inspected by:

Date:

inf
09/12/01


 SYRACUSE
NEW YORK 13201

CERTIFICATE OF TEST

A M CASTLE, INC

S
H
I
P
T
O

A M CASTLE, INC

 3400 N. WOLF RD
FRANKLIN PARK, IL 60131

 3400 N WOLF RD
FRANKLIN PARK, IL 60131

04

 DATE
05/19/09

OUR ORDER NO.

P5-10661-9-01

CUSTOMER ORDER # & DATE

01-18965

CUSTOMER REQ. #

DISTRICT

B PARSONS

SHIPPED
FROM

SYRACUSE

DESCRIPTION OF MATERIAL

CRU 17-4PH RT A IAC 48934

SIZE

3 RD

AMC-3174-10 REV B ASME-SA564-07ED T630 ASTM-A564-04 T630

AMS-3643R (EX SURFACE) AISI 630 UNS# S17400

DFARS 252.225-7014 ALT 1


and
09/12/01

HEAT NO.

CHEMICAL ANALYSIS

HEAT NO.	C	MN	P	S	SI	NI	CR	MO	CU	CB	TA
A10746	.038	.40	.030	.017	.34	4.07	15.14	.13	3.07	.27	.012

CASTLE METALS CORP.

DATE RCVD

IAC

APPROVED BY

QUANTITY

HEAT NO.

MECHANICAL PROPERTIES

1894 # A10746

TENSILE PSI

YLD. 22% PSI

%ELONG4D

RED/AREAX

HARDNESS

CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. AIRCOOL:

206,310

176,410

12.4

50.5

BHN 415

MACRO TEST OK

FERRITE 1 %

MAGNAFLUX F/S = 0/0

ELECTRIC FURNACE ADD MELTED

REDUCTION RATIO: 32.1:1

MATERIAL SOLUTION TREATED AT 1900 DEG. F. HELD 45 MINUTES AT TEMPERATURE - AIRCOOLED.

CRUCIBLE MATERIALS CORP., VENDOR #18610.

MATERIAL INGOT CAST.

NAFTA - YES

 MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT
NO WELD REPAIR PERFORMED
MATERIAL MELTED IN U.S.A.

 THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS DC

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF _____, 20

NOTARY PUBLIC

CERTIFIED
BY:
 THE ABOVE MATERIAL WAS MANUFACTURED AND TESTED IN ACCORDANCE
WITH ABOVE SPECIFICATIONS AND IS IN CONFORMANCE WITH THOSE
SPECIFICATION REQUIREMENTS.
CRUCIBLE MATERIALS CORPORATION
ACTING BY AND THROUGH ITS SPECIALTY METALS DIVISION

QUALITY ASSURANCE REPRESENTATIVE

DANA A. CUSANO - QUALITY ASSURANCE REPRESENTATIVE